

THE MINERAL INDUSTRY OF SWEDEN

By Harold R. Newman

Sweden is endowed with significant deposits of iron ore, certain base metals (copper, lead, and zinc), and several industrial minerals, including dolomite, feldspar, granite, ilmenite, kaolin, limestone, marble, quartz, and wollastonite. The country is well known for the production of high-quality steel. Sweden relies heavily on hydrocarbon imports, owing to inadequate indigenous resources; as a result, the country has developed nuclear and hydroelectric power.

Overall mine production increased somewhat in 1997 compared with that of 1996. Despite the closure of Outokumpu Oy's Viscaria Mine, the increased output at North Mining Svenska AB's Zinkgruvan Mine and Boliden Mineral AB's mines accounted for this increased base metal production. (*See table 1.*)

Because Sweden lacked a zinc smelter, most zinc ore and concentrate, one of the largest mineral exports, was shipped to Norway. The country imported most of the raw material required to operate its copper and lead smelter. (*See table 2.*)

Sweden's recycling rate for aluminum cans is high because of close cooperation among the can stock producer (Finspong), the can manufacturer (PLM Fosie), the collection companies (Returpak and PLM Fosie), and the secondary smelters (Gotthard Aluminum and Finspong). Consequently, secondary aluminum production has increased in the past few years.

After acceding to the European Union (EU) on January 1, 1995, Sweden liberalized its mineral policy to parallel EU standards. The policy, based on the Swedish Minerals Act, 1992, eliminated laws requiring foreign companies to get special permission for prospecting, annulled the State's participation in mining enterprises (so-called "crown shares"), and revoked all taxes and royalties, except for a 28% corporate tax, one of the lowest in Europe. Furthermore, an exploration permit holder will not receive an exploration permit until adequate financial and technical capabilities can be proven.

In 1997, the Swedish Government submitted its proposals for revised mineral legislation to keep abreast of international developments in this field. The most important anticipated changes are the introduction of the obligatory filing of data after abandonment of an area to avoid duplication of work, the reorganization of the mining inspectorate (Bergmästarämbetet) to increase its effectiveness, the shortened time delays in handling of applications, and the elimination of some elements of discretion that have remained in the handling of exploration applications. Also, more-explicit rules for environmental protection would be incorporated in the exploration permit (Engineering and Mining Journal, 1998).

Exploration interest was significant with a number of Australian, Canadian, and European mining companies applying for permits. Exploration is by a permit that is valid for a period

of 3 years; extensions may be granted up to a maximum of 10 years. Exploration effort reached new record levels in 1997. According to preliminary figures, total exploration expenditure was about \$27.5 million compared with about \$24 million in 1996 (Engineering and Mining Journal, 1998).

Trelleborg AB announced plans to sell a majority stake in its wholly owned subsidiary Boliden Mineral AB. Trelleborg was expected to sell shares representing between 51% and 56% of Boliden in an initial public offering and to list the company in Canada on the Toronto Stock Exchange. Trelleborg is engaged in mining/milling operations in Sweden, Spain, and Saudi Arabia and smelting/refining operations in Sweden and Norway. Trelleborg could receive up to \$660 million from the sale (Mining Journal, 1997a).

Boliden's Aitik copper mine, near Gällivare, is one of the lowest grade and most northerly copper mines in the world and is one of Europe's largest open-pit mines. The ore occurs in a shear zone that can be followed from Kiruna, Sweden, to Lake Ladoga in Russia. The gold and silver byproducts contribute substantially to the profitability of the Aitik copper mine.

Western Europe's largest gold mine, Williams Resources Inc. of Canada's open pit Bjorgdal Mine, continued production in 1997. The former owner, Terra Mining AB, was bought by Williams in 1996. A plant upgrade was completed that will allow planned production to increase to more than 3,000 kilograms. Large scale processing was helping to keep production costs down. Williams was continuing its exploration activities. The company reported that this has increased estimated proven plus probable reserves to 19,265,000 metric tons (t) grading an average of 2.21 grams per metric ton of gold (g/t). (Williams Resources Inc., 1997, William Resources announces updated reserves and exploration results, accessed February 24, 1997, on the World Wide Web at URL [http://www.info-mine.com/william/February 20, 1997](http://www.info-mine.com/william/February20,1997)).

Williams was also continuing exploration on the Barsele gold project. The project was reported to host estimated resources of 17.6 million metric tons (Mt) of ore averaging 1.8 g/t gold. Mineralization occurs within a granodiorite intrusive that ranges from 50 to 200 meters (m) in width and extends for an east-west strike length of 8 kilometers (km). The orebody is considered to be potentially amenable to open-pit mining methods (Northern Miner, 1997).

Luossavaara-Kiirunavaara AB (LKAB) has iron ore mines and processing plants in Kiruna and Malmberget, a pelletizing plant in Svappavaara, and harbors at Luleå and Narvik. The company operated close to full capacity in 1997.

Kiruna has the world's largest, most modern underground iron ore mine. Mining is large scale and highly automated. In 1997

about 22.8 Mt of crude ore was mined from the ore body which equates to about 62,000 metric tons per day. The Kiirunavavaara ore body runs about 4 kilometers (km) from north to south. It averages 80 m in width and extends to a depth of about 2 km at a 60-degree incline. In May 1997, the first section of a new mining system KUI2000, came into operation. This new main level is at a depth of 1,045 m, and mining will continue near this level until around 2018 (LKAB Kiruna, 1997, Mining in Kiruna, accessed December 1, 1997, on the World Wide Web at <http://www.lkab.se/english/kiruna/miningInKiruna.html>).

LKAB's Malmberget operations started a major project with the construction of a new main level at 1,100 m, some 250 m below the present level of 815 m. In addition, there are projects to increase pellet production, to start production and processing of hematite ores, and to build new facilities for loading and servicing the trains that transport the products to Luleå (Mining Technology, LKAB current projects, Malmberget, accessed October 8, 1997, on the World Wide Web at <http://www.mining-technology.com/projects/malmberget/index.html>).

Svenskt Stal AB (SSAB) is Scandinavia's leading manufacture of commercial steel. Most production consisted of steel sheets and plates, produced mainly in three SSAB subsidiaries at Borlänge, Luleå, and Oxelösund. The SSAB Oxelösund AB complex consisted of a coking plant, blast furnaces, a steel mill, and a continuous casting line for slabs and heavy plate of up to 155 millimeters in thickness. The 2-million-metric-ton per-year SSAB Tunnplatt AB was an integrated steel company with a coking plant, blast furnaces, and continuous casting line for the manufacture of slab and heavy plate.

The Zinkgruvan Mine, the largest zinc mine in Sweden, operated by Ammeberg Mining AB, was sold by its owner, Union Minière (UM) of Belgium, to North Mining Svenska AB, a subsidiary of the Australian company, North Limited. Currently, the operation is producing about 60,000 metric tons per year (t/yr) of zinc in concentrate. The company reported that it plans to increase this to 80,000 t/yr during the next three years (Mining Journal, 1997b).

In the industrial minerals area, extensive changes in ownership have been reported during the last 5 to 6 years. This has been an expanding sector in Sweden, and a significant number of deposits were owned or controlled by international owners.

Limestone occurs in layers of different geologic ages throughout the country. About one-half of the industrial mineral value was contributed by limestone. A significant amount of limestone

production was by Kalproduktion Storugns AB, owned by Nordkalk AB, a company within the Finnish Partek OY Group.

The company mined about 2.8 Mt at Storugns on the Baltic Island of Gotland. About 40% of this was consumed by the metallurgical industry and 30% ended up as burnt lime. Other uses included the chemical and sugar industries and environmental applications. About 55% of total production was exported.

Borghamnsten AB has quarries and a factory equipped to saw raw blocks of marble. The company operates a raw marble quarry at Askersund near the Glanshammar locality. Annual quarry production is about 14,000 cubic meters (m³), which gives about 2,000 m³ of marble as raw blocks.

Swedish peat area covers 6.4 million hectares (ha) which is about 15% of the country's total land area. About 865,000 ha were considered to be suitable for commercial production. In 1996, almost 8,000 ha was in production, most of which was used for fuel; the remainder was used for agriculture. The 80% used for fuel purposes was mainly in cogeneration plants for electric power and district heating. Some local authorities and industrial enterprises used peat as fuel to produce power and heat.

Sweden has a well-developed transportation system, especially in the southern part of the country. There were 97,400 km of highway and 12,000 km of railroads. About 65% of waterborne cargo was handled by the five biggest ports, Göteborg, Helsingborg, Luleå, Stockholm, and Malmö respectively. Truck ferries have become an important form of transportation.

References Cited

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Mining Journal, 1997a, Boliden seeks Canadian funding: Mining Journal [London], v. 328, no. 8432, June 6, p. 454.
———1997b, North's zinc plans: Mining Journal [London], v. 329, no. 8438, July 18, p. 47.
Northern Miner, 1997, Williams secures foothold in Europe: Northern Miner, v. 83, no. 19, July 7, p. 1.

Major Source of Information

Geological Survey of Sweden
Mineral Resources Information Office
Skolgatan 4
93070 Malå, Sweden

TABLE 1
SWEDEN: PRODUCTION OF MINERAL COMMODITIES 1/

(Metric tons unless otherwise specified)

Commodity	1993	1994	1995	1996	1997 e/
METALS					
Aluminum metal:					
Primary	82,363	83,900	94,500 r/	98,306 r/	98,377 2/
Secondary e/	19,000	33,000	23,000 r/	24,000 r/	19,000
Copper:					
Mine output, Cu content	88,909	79,384	83,600	71,700	86,600
Metal:					
Smelter:					
Primary	76,298	79,080	80,000	100,000 e/	100,000
Secondary	22,102	19,620	30,000	25,000 e/	25,000
Total	98,400	98,700	110,000	125,000 e/	125,000
Refined:					
Primary	76,300	77,300	78,000	90,000 e/	85,000
Secondary	22,486	25,750	27,100	37,000 e/	32,000
Total	98,786	103,050	105,100	127,000 e/	117,000
Gold:					
Mine output, Au content kilograms	6,548	6,364	6,500	6,100 e/	7,000
Metal, primary 3/ do.	7,278	7,998	8,200	10,100 e/	11,000
Iron and steel:					
Iron ore concentrate and pellets:					
Gross weight thousand tons	18,728	19,663	21,634	21,020	21,893 2/
Fe content do.	11,901	12,587	13,880	14,714	13,912 2/
Metal:					
Pig iron and sponge iron do.	2,850	3,040	3,020	3,255	3,060 2/
Ferroalloys:					
Ferrochromium	127,543	134,076	130,170	138,110 r/	101,842 2/
Ferrosilicon	20,400	22,000	20,000	21,287 r/	22,000
Total	147,943	156,076	150,170	159,397 r/	123,842
Steel, crude thousand tons	4,591	4,952	4,953	4,910	5,147 2/
Semimanufactures, rolled e/ do.	4,000	4,000	4,529	4,457	4,500
Lead:					
Mine output, Pb content	111,709	112,787	137,200	136,200	146,000
Metal:					
Smelter: e/					
Primary	50,000	41,200	42,200	42,100	42,200
Secondary	37,500	42,500	42,000	42,000	44,000
Total smelter	87,500	83,700	84,200	84,100	86,200
Refined:					
Primary	46,752	46,600	39,700	42,200 2/	34,700
Secondary	37,764	36,000	51,500	41,900 2/	51,500
Total refined	84,516	82,600	91,200	84,100 2/	86,200
Molybdenum, oxide, roasted, Mo content e/	4,000	4,000	4,000	4,000	3,500
Nickel, metal: e/					
Unwrought, secondary	250	250	250	100	100
Primary	500	100	--	-- 2/	--
Selenium, elemental, refined	50 e/	30	26	20	20
Silver:					
Mine output, Ag content kilograms	255,257	276,042	268,200	272,000	280,000
Metal, primary 3/ do.	293,700	295,000	261,000	301,000	300,000
Tin, metal:					
Unwrought	30	10	--	--	--
Alloy	1,040	500	--	--	--
Zinc, mine output, Zn content	168,617	159,858	167,090	160,325	158,000
INDUSTRIAL MINERALS					
Cement, hydraulic thousand tons	2,200	2,300	2,539	2,447	2,320 2/
Clays, kaolin e/ do.	100	100	460	460	450
Feldspar, salable, crude and ground	35,492 r/	44,250 r/	45,000 r/	45,000 r/	50,000
Fertilizer, manufactured: e/					
Nitrogenous thousand tons	450	450	450	400	400
Phosphatic do.	10	10	10	10	10
Mixed do.	300	300	300	300	300

See footnotes at end of table.

TABLE 1--Continued
SWEDEN: PRODUCTION OF MINERAL COMMODITIES 1/

(Metric tons unless otherwise specified)

Commodity	1993	1994	1995	1996	1997 e/
INDUSTRIAL MINERALS--Continued					
Lime e/ thousand tons	500	500	530 2/	540	600
Olivine e/ do.	120	100	50	--	--
Pyrite, gross weight do.	--	--	--	--	--
Quartz and quartzite e/ do.	500	500	518	525	500
Sodium sulfate, synthetic e/ do.	100	100	100	--	--
Stone: e/					
Dimension:					
Mostly unfinished do.	100	150	150	160	150
Granite do.	80 2/	80	90 2/	100 2/	100
Limestone do.	5	5	5	5	5
Slate do.	20	20	20	20	20
Other do.	20	20	10 2/	10 2/	10
Crushed:					
Dolomite do.	700	700	700	600	600
Granite do.	5,000	5,000	3,200 2/	3,500 2/	3,500
Limestone:					
For cement manufacture do.	1,000	1,000	4,000	4,000	4,000
For lime manufacture do.	700	700	1,000	1,000	1,000
For other construction and industrial uses do.	1,500	1,500	1,700	2,000	1,800
Chalk do.	30	30	50 2/	25	30
For agricultural uses do.	350	350	450 2/	475 2/	400
For other uses do.	100	100	1,000	1,000	1,000
Total do.	3,680	3,680	8,200 2/	8,500	8,230
Sandstone do.	50	50	50	100	100
Undifferentiated do.	30,000	30,000	30,000	25,000	25,000
Other do.	700	700	700	500	500
Sulfur, byproduct: e/					
From metallurgy do.	125	125	125	100	100
From petroleum do.	40	40	40	40 r/	60
Total do.	165	165	165	140 r/	160
Talc, soapstone e/	20,000	25,000	25,000	30,000	25,000
MINERAL FUELS AND RELATED MATERIALS					
Carbon black thousand tons	20 e/	20	--	--	--
Coal, anthracite and bituminous e/ do.	10	10	--	--	--
Coke, metallurgical do.	1,200 e/	1,200 e/	1,147	1,145	1,200
Gas, manufactured: e/					
Coke oven gas million cubic meters	500	500	500	500	500
Blast furnace gas do.	4,000	4,000	4,000	3,500	3,500
Peat: e/					
Agricultural use thousand cubic meters	1,200	1,100	1,052	1,084	1,100
Fuel do.	2,400	2,600	2,624	2,278	2,400
Petroleum:					
Crude e/ thousand 42-gallon barrels	10	10	--	--	--
Refinery products: e/					
Liquefied petroleum gas do.	3,000	3,000	3,000	3,500	3,500
Naphtha do.	500	500	300	500	500
Gasoline, motor do.	31,500	31,500	32,000	32,500	32,500
Jet fuel do.	2,500	2,500	2,500	2,500	2,500
Kerosene do.	50	50	50	50	50
Distillate fuel oil do.	81,000	81,000	80,000	75,000	75,000
Residual fuel oil do.	28,000	28,000	28,000	25,000	25,000
Other do.	4,000	4,000	4,000	3,000	3,000
Refinery fuel and losses do.	10,000	10,000	10,000	5,000	5,000
Total do.	160,550	160,550	159,850	147,050	147,050

e/ Estimated. r/ Revised.

1/ Table includes data available through June 1998.

2/ Reported figure.

3/ Includes only that recovered from indigenous ores excluding scrap.

TABLE 2
SWEDEN: STRUCTURE OF THE MINERAL INDUSTRY IN 1997

(Thousand metric tons unless otherwise specified)

Commodity		Major operating companies and major equity owners	Location of main facilities	Annual capacity
Aluminum		Granges AB (Electrolux, 100%)	Sundsvall smelter at Kubikenborg	98
Cement		Cementa AB (Euroc, 100%)	Plants at Degerhamn, Skovde, and Slite	3,400
Copper:				
Ore, copper content		Boliden Mineral AB (Trelleborg AB 100%)	Mines at Aitik, Garpenberg, Kankberg, Kristineberg, Langdal, Petiknas, and Renstrom	68
Do.		Outokumpu Oy	Mines at Viscaria(closed)/Pahtohavare	22
Metal		Boliden Mineral AB (Trelleborg AB 100%)	Smelter and refinery at Ronnskar	100
Feldspar		Berglings Malm & Mineral AB (Omya GmbH)	Mines at Beckegruvan, Hojderna, and Limbergsbo	50
Do.		Forshammar Mineral AB (Omya GmbH)	Mines at Limberget and Riddarhyttan	30
Do.		Larsbo Kalk AB (Omya GmbH)	Mines at Glanshamar and Larsbo	20
Ferroalloys		Vargon Alloys AB	Plant at Vargon	175
Gold:				
Ore, gold content	kilograms	Williams Resources Inc.	Bjorgdal Mine at Skelleftea	3,000
Do.	do.	Boliden Mineral AB (Trelleborg AB, 100%)	Mines at Aitik, Akerberg, Kankberg, Kristineberg, Langdal, Petiknas, and Renstrom	2,000
Metal		Boliden Metals AB (Trelleborg AB 100%)	Smelter and refinery at Ronnskar	9
Iron ore		Luossavaara-Kiirunavaara AB (Government 98%)	Mines at Kiruna and Malmberget	28,500
Iron and steel		Svenskt Stal AB (Government, 48%)	Steelworks at Luleå, Oxelosund, and Domnarvet	3,500
Kyanite		Svenska Kyanite AB (Svenska Mineral, 100%)	Quarry at Halskoberg	10
Lead:				
Ore, lead content		Boliden Mineral AB (Trelleborg AB, 100%)	Mines at Garpenberg, Laisvall, Langdal, Petiknas, and Renstrom	110
Do.		North Mining Svenska AB	Zinkgruvan Mine at Ammeberg	20
Metal		Boliden Metals AB (Trelleborg AB, 100%)	Smelter and refinery at Ronnskar	115
Lime		Euroc Mineral AB	Plants at Limham, Koping, and Storugns	250
Do.		Svenska Mineral AB	Plants at Rattvik and Boda	250
Petroleum, refined	barrels per day	Skandinaviska Raffinaderi AB	Refinery at Lysekil	210,000
Do.		BP Raffinaderi AB	Refinery at Goteborg	100,000
Do.		Shell Raffinaderi AB	do.	82,000
Do.		AB Nynas Petroleum	Refineries at Goteborg, Malmo, and Nynashamn	54,000
Silver, metal	kilograms	Boliden Metals AB (Trelleborg AB, 100%)	Smelter and refinery at Ronnskar	300,000
Do.	do.	North Mining Svenska AB	Zinkgruvan Mine at Ammeberg	25,000
Zinc, ore, zinc content		Boliden Mineral AB (Trelleborg AB, 100%)	Mines at Garpenberg, Laisvall, and Langdal	112
Do.		North Mining Svenska AB	Zinkgruvan Mine at Ammeberg	60

TABLE 3
SWEDEN: EXPORTS OF MINERAL COMMODITIES IN 1996 1/

(Metric tons unless otherwise specified)

			Destinations	
Commodity		Total	United States	Other (principal)
METALS				
Alkali and alkaline-earth metals:				
Alkali metals	value, thousands	\$51	--	Norway \$24; Thailand \$22; Germany \$4.
Alkaline-earth metals	do.	\$56	\$16	Ukraine \$15; Italy \$14; Finland \$9.
Aluminum:				
Ore and concentrate	do.	\$1	--	All to Czech Republic.
Oxides and hydroxides		457	--	Norway 329; Finland 78; Czech Republic 26.
Metal including alloys:				
Scrap		53,979	1,624	United Kingdom 12,401; Germany 8,778; Denmark 6,580.
Unwrought		70,664	--	Germany 29,347; United Kingdom 11,763; Netherlands 10,720.
Semimanufactures		88,045	7,310	Denmark 20,453; United Kingdom 12,062; Norway 10,471.
Antimony, metal including alloys, all forms		10	--	Finland 6; Canada 3; Norway 1.
Bismuth, metal including alloys, all forms	value, thousands	\$7	--	Finland \$3; Denmark \$2; Norway \$2.
Cadmium, metal including alloys, all forms	do.	\$26	\$1	Denmark \$5; Japan \$5; Germany \$4.
Chromium:				
Ore and concentrate		13	--	All to Norway.
Oxides and hydroxides		17	--	Norway 10; Germany 3; Yugoslavia 2.
Metal including alloys, all forms		20	--	United Kingdom 11; Belgium-Luxembourg 2; Finland 2.
Cobalt:				
Ore and concentrate		2	--	All to South Africa.
Oxides and hydroxides		396	6	Norway 371; South Africa 14; Poland 4.
Metal including alloys, all forms	value, thousands	\$6,017	\$482	United Kingdom \$1,194; Norway \$1,152; Netherlands \$1,057.
Columbium and tantalum, tantalum metal including alloys, all forms	do.	\$146	--	Ireland \$44; Germany \$43; Iceland \$37.
Copper:				
Ore and concentrate		42,150	--	Finland 41,929; Italy 219.
Matte and speiss including cement copper		2	--	Indonesia 1; Norway 1.
Metal including alloys:				
Scrap		17,996	225	Germany 3,659; Hong Kong 3,159; Netherlands 2,855.
Unwrought	value, thousands	\$73,493	\$26	United Kingdom \$56,631; Finland \$6,109; Norway \$4,684.
Semimanufactures	do.	\$502,868	\$55,681	Germany \$88,722; Denmark \$55,601; Finland \$54,530.
Germanium, metal including alloys, all forms	do.	\$18	--	United Kingdom \$17; China \$1.
Gold:				
Waste and sweepings	do.	\$13,673	\$1	Germany \$11,657; United Kingdom \$1,080; Denmark \$521.
Metal including alloys, unwrought and partly wrought	kilograms	12,724	(2/)	Switzerland 6,018; Germany 3,015; Spain 2,000.
Iron and steel:				
Ore and concentrate, excluding roasted pyrite	thousand tons	15,173	48	Germany 4,231; Finland 2,346; Netherlands 1,885.
Metal:				
Scrap		283,990	6	Denmark 111,964; Spain 64,995; Turkey 48,041.
Pig iron, cast iron, related materials		81,192	799	Italy 38,345; Spain 26,474; Japan 6,324.
Ferroatloys:				
Ferromanganese		2,013	--	Finland 847; Italy 201; Norway 189.
Ferronickel	value, thousands	\$1	--	All to Republic of Korea.
Ferrosilicomanganese		272	--	Finland 180; Lithuania 42; Italy 22.
Ferrosilicon		1,914	--	Germany 696; France 493; Italy 292.
Silicon metal 3/		7	--	Denmark 5; Germany 1.
Unspecified		1,486	496	Finland 429; Germany 128; Italy 110.
Steel, primary forms	value, thousands	\$155,084	\$40,534	United Kingdom \$25,043; Republic of Korea \$15,137; Austria \$4,770
Semimanufactures:				
Flat-rolled products:				
Of iron or nonalloy steel:				
Not clad, plated, coated	thousand tons	1,236	67	Germany 300; Denmark 194; Italy 117.
Clad, plated, coated	value, thousands	\$343,703	\$7,094	Denmark \$57,179; Finland \$31,461; Germany \$29,831.
Of alloy steel		773,441	72,706	United Kingdom 263,895; Germany 107,937; Italy 51,863.
Bars, rods, angles, shapes, sections	value, thousands	\$772,759	\$69,797	Germany \$136,014; United Kingdom \$75,117; Italy \$62,938.
Rails and accessories		14,311	--	Germany 5,275; Malaysia 5,013; Norway 2,351.
Wire		83,370	7,870	Germany 16,154; Finland 10,995; Denmark 8,367.

See footnotes at end of table.

TABLE 3--Continued
SWEDEN: EXPORTS OF MINERAL COMMODITIES IN 1996 1/

(Metric tons unless otherwise specified)

Commodity	Total	Destinations	
		United States	Other (principal)
METALS--Continued			
Iron and steel--Continued:			
Metal--Continued:			
Semimanufactures--Continued:			
Tubes, pipes, fittings	value, thousands	\$772,745	\$34,778 Germany \$113,716; France \$67,268; Italy \$61,109.
Lead:			
Ore and concentrate	79,738	--	Belgium-Luxembourg 30,893; Netherlands 22,194; United Kingdom 13,913
Oxides	534	--	Norway 528; Poland 5; Denmark 1.
Metal including alloys:			
Scrap	420	--	Belgium-Luxembourg 136; United Kingdom 127; Norway 68.
Unwrought	51,892	--	United Kingdom 11,418; Germany 10,591; Italy 8,704.
Semimanufactures	839	--	Germany 281; Denmark 242; Finland 136.
Magnesium, metal including alloys:			
Scrap	77	--	United Kingdom 56; Germany 15; Norway 6.
Unwrought	1,683	2	Germany 646; Austria 385; Finland 302.
Semimanufactures	65	--	Austria 50; Germany 4; Finland 3.
Manganese:			
Oxides and hydroxides	108	--	Norway 52; Germany 24; Czech Republic 13.
Metal including alloys, all forms	121	--	Finland 28; Germany 21; Norway 11.
Mercury	value, thousands	\$26	-- Yugoslavia \$20; France \$4; Norway 41.
Molybdenum, metal including alloys:			
Unwrought, including waste and scrap	17	--	Germany 16; Slovakia 1.
Semimanufactures	value, thousands	\$398	\$1 Ireland \$101; Japan \$82; Netherlands \$44.
Nickel:			
Matte and speiss	5	--	All to Norway.
Metal including alloys:			
Scrap	248	4	Germany 180; Austria 38; United Kingdom 23.
Unwrought	245	2	Norway 171; United Kingdom 39; Russia 21.
Semimanufactures	3,115	1,236	Germany 390; United Kingdom 239; France 157.
Platinum-group metals:			
Waste and sweepings	value, thousands	\$1,494	\$3 Norway \$1,341; Denmark \$130; Switzerland \$21.
Metal including alloys, unwrought and partly wrought	do.	\$1,005	\$24 Norway \$386; Finland \$195; Germany \$173.
Silver, metal including alloys, unwrought and partly wrought	do.	\$51,776	\$3 Germany \$19,561; United Kingdom \$12,526; Norway \$11,014.
Tin:			
Ore and concentrate	do.	\$2	-- All to Norway.
Metal including alloys:			
Scrap	173	--	Belgium-Luxembourg 140; Denmark 17; Germany 9.
Unwrought	207	(2/)	South Africa 89; Norway 62; Finland 22.
Semimanufactures	value, thousands	\$1,015	-- Denmark \$467; Norway \$240; Finland \$231.
Titanium:			
Oxides	113	20	Norway 33; Finland 29; Denmark 19.
Metal including alloys:			
Unwrought, including waste and scrap	577	500	United Kingdom 35; Germany 28; Norway 8.
Semimanufactures	421	52	Denmark 112; Norway 88; Finland 45.
Tungsten, metal including alloys:			
Unwrought, including waste and scrap	31	15	Germany 11; Norway 2; Finland 1.
Semimanufactures	value, thousands	\$2,833	\$70 Japan \$628; Israel \$470; Denmark \$270.
Uranium and thorium, metal including all forms:			
Uranium	do.	\$587	\$45 France \$542.
Thorium	do.	\$2,966	\$298 France \$1,398; Belgium-Luxembourg \$1,268; Israel \$2.
Zinc:			
Ore and concentrate	315,030	--	Belgium-Luxembourg 109,852; Norway 86,603; Finland 51,630.
Oxides	14	--	Estonia 4; Norway 4; Netherlands 3.
Metal including alloys:			
Scrap	6,524	64	United Kingdom 798; Germany 617; Norway 480.
Unwrought	158	--	Norway 67; Netherlands 16; Italy 15.
Semimanufactures 4/	value, thousands	\$1,141	\$1 United Kingdom \$269; Norway \$219; Germany \$150.

See footnotes at end of table.

TABLE 3--Continued
SWEDEN: EXPORTS OF MINERAL COMMODITIES IN 1996 1/

(Metric tons unless otherwise specified)

			Destinations	
Commodity		Total	United States	Other (principal)
METALS--Continued				
Zirconium:				
Ore and concentrate		340	--	Norway 321; Denmark 19.
Metal including alloys:				
Unwrought, including waste and scrap		7	--	All to France.
Semimanufactures		36	8	Germany 18; China 7; Netherlands 2.
Other:				
Ores and concentrates		33	--	All to Norway.
Oxides and hydroxides		453	1	United Kingdom 374; India 20; Norway 17.
Ashes and residues		63,043	7	Norway 43,756; United Kingdom 10,415; Netherlands 7,529.
Base metals including alloys, all forms		37	26	Japan 8; Austria 2; Brazil 1.
Metalloids 5/		28	--	United Kingdom 20; Norway 3; Finland 2.
Precious metals, n.e.s.:				
Ores and concentrates	value, thousands	\$27,809	--	Germany \$21,016; United Kingdom \$6,786; Norway \$7.
Waste and sweepings	do.	\$7,594	\$50	Norway \$2,483; Germany \$2,063; France \$1,783.
INDUSTRIAL MINERALS				
Abrasives, n.e.s.:				
Natural, corundum, emery, pumice, etc.		226	--	Norway 96; Poland 72; Germany 41.
Artificial corundum		407	--	Norway 373; Estonia 28; Hungary 2.
Dust and powder of precious and semiprecious stones				
including diamonds	value, thousands	\$167	--	Ireland \$92; United Kingdom \$36; South Africa \$22.
Grinding and polishing wheels and stones	do.	\$30,319	\$2,114	Norway \$5,292; Finland \$3,534; Germany \$2,945.
Asbestos, crude		18	--	All to United Kingdom.
Barite and witherite		114	--	Norway 90; Poland 24.
Boron, oxides and acids		136	2	Norway 112; Japan 9; Germany 4.
Bromine, fluorine, iodine	value, thousands	\$11	--	Finland \$6; Norway \$3; Denmark \$2.
Cement	thousand tons	1,180	762	Nigeria 396; Finland 15; Norway 5.
Chalk		10,917	6	Denmark 4,615; Finland 3,615; Norway 2,485.
Clays, crude:				
Bentonite		5,522	--	Finland 2,685; Norway 2,519; Germany 269.
Kaolin		13,753	--	Norway 7,153; Denmark 6,531; Russia 18.
Unspecified		414	--	Finland 139; Netherlands 72; Norway 58.
Diamond, natural:				
Gem, not set or strung	value, thousands	\$291	--	Russia \$260; Togo \$16; Norway \$13.
Industrial stones	do.	\$714	--	Belgium-Luxembourg \$699; Argentina \$6; Netherlands \$6.
Diatomite and other infusorial earth		1,343	18	Russia 329; Finland 270; Lithuania 225.
Feldspar		24,731	--	United Kingdom 11,999; Germany 3,936; Italy 2,744.
Fertilizer materials:				
Crude, n.e.s.		572	--	Japan 252; Norway 211; Finland 105.
Manufactured:				
Ammonia		1,145	--	Norway 1,085; Germany 49; Indonesia 5.
Nitrogenous	value, thousands	\$16,386	\$12	Ireland \$5,519; Norway \$3,894; Germany \$2,753.
Phosphatic		7	--	All to Norway.
Potassic		138,168	--	Norway 26,007; Netherlands 25,393; Finland 18,596.
Unspecified and mixed		110,246	--	Denmark 93,516; Germany 16,230; Norway 284.
Fluorspar		2,320	--	Finland 1,102; Austria 761; Norway 380.
Graphite, natural		103	1	Japan 39; United Kingdom 33; Switzerland 10.
Gypsum and plaster		376	--	Norway 179; Finland 101; Denmark 75.
Lime		114,047	--	Denmark 44,895; Finland 44,042; Norway 25,078.
Magnesium compounds:				
Magnesite, crude		12	--	United Kingdom 11; Norway 1.
Oxides and hydroxides		320	--	Denmark 94; United Kingdom 73; Norway 65.
Mica:				
Crude including splittings and waste		112	--	Norway 51; Latvia 31; Hungary 18.
Worked including agglomerated splittings	value, thousands	\$124	\$2	Norway \$83; Poland \$23; Finland \$10.
Nitrates, crude		44	--	Norway 37; Denmark 7.
Phosphates, crude		1,130	4	Denmark 595; Canada 470; Norway 59.
Pigments, mineral, iron oxides and hydroxides, processed		5,803	1,258	India 1,520; France 907; Hong Kong 740.
Precious and semiprecious stones other than diamond:				
Natural	value, thousands	\$4,285	\$111	Thailand \$1,168; United Kingdom \$1,020; Canada \$913.

See footnotes at end of table.

TABLE 3--Continued
SWEDEN: EXPORTS OF MINERAL COMMODITIES IN 1996 1/

(Metric tons unless otherwise specified)

			Destinations	
Commodity	Total	United States	Other (principal)	
INDUSTRIAL MINERALS--Continued				
Precious and semiprecious stones other than diamond--				
Continued:				
Synthetic	value, thousands	\$18,510	--	Ireland \$18,491; Canada \$17; Norway \$1.
Salt and brine		1,774	23	Norway 1,172; Finland 239; Denmark 103.
Sodium compounds, n.e.s.:				
Soda ash, manufactured		275	--	Norway 221; Finland 20; Poland 13.
Sulfate, manufactured		28,150	6	Finland 7,929; Denmark 6,266; Germany 3,382.
Stone, sand and gravel:				
Dimension stone:				
Crude and partly worked		971,690	254	Denmark 496,676; Germany 368,486; Poland 45,831.
Worked		8,236	8	Denmark 4,823; Norway 1,864; Poland 1,135.
Dolomite, chiefly refractory-grade		41,225	--	Denmark 14,798; Norway 10,003; Finland 7,611.
Gravel and crushed rock	thousand tons	3,347	(2/)	Denmark 2,031; Germany 1,094; Norway 100.
Limestone other than dimension	do.	1,213	--	Finland 968; Denmark 112; Lithuania 47.
Quartz and quartzite		196,916	--	Norway 192,178; Germany 4,456; Japan 111.
Sand other than metal-bearing		69,052	--	Norway 61,568; Denmark 3,703; Germany 1,146.
Sulfur:				
Elemental, crude including native and byproduct		568	--	Norway 494; Netherlands 63; Finland 9.
Dioxide		51,670	40	Finland 20,347; Norway 9,970; Germany 4,974.
Sulfuric acid		240,127	--	Netherlands 109,361; United Kingdom 64,540; Belgium-Luxembourg 27,077.
Talc, steatite, soapstone, pyrophyllite		23,077	7	Netherlands 13,693; Norway 6,762; United Kingdom 1,527.
Vermiculite, perlite, chlorite		110	--	Norway 109; Finland 1.
Other:				
Crude		5,056	14	Norway 4,210; Denmark 400; Finland 235.
Slag and dross, not metal-bearing		100,355	--	Finland 67,412; Norway 7,575; Denmark 7,545.
MINERAL FUELS AND RELATED MATERIALS				
Asphalt and bitumen, natural		69	--	Norway 55; Poland 12; Finland 2.
Carbon black		18,285	--	Poland 7,380; Finland 5,684; Denmark 2,540.
Coal:				
Anthracite		27	--	Norway 21; Sri Lanka 6.
Bituminous		1,770	--	Finland 1,080; Norway 546; Egypt 82.
Briquets of anthracite and bituminous coal		57,330	--	United Kingdom 57,292; Russia 37; Norway 1.
Lignite including briquets		3,229	--	All to Norway.
Unspecified		439	--	Norway 415; Finland 21; Denmark 3.
Coke and semicoke		58,058	--	United Kingdom 17,930; Germany 15,364; Norway 14,830.
Gas, natural, liquefied		70	--	All to Norway.
Peat including briquets and litter		61,607	13	Norway 18,805; Denmark 13,049; Netherlands 12,044.
Petroleum:				
Crude	value, thousands	\$1	--	All to Norway.
Refinery products:				
Liquefied petroleum gas	do.	\$36,366	\$608	Norway \$10,554; United Kingdom \$10,381; Germany \$3,685.
Gasoline	thousand tons	1,878	--	Denmark 587; United Kingdom 279; Norway 256.
Mineral jelly and wax		379	9	Denmark 226; Norway 56; Poland 29.
Kerosene and jet fuel		97,198	--	Norway 47,397; United Kingdom 20,203; Germany 12,958.
Lubricants	thousand tons	3,665	45	Germany 2,061; Denmark 504; Norway 247.
Residual fuel oil		do.	129	United Kingdom 916; Italy 847; Denmark 248.
Bitumen and other residues		570,449	--	Norway 208,078; Finland 159,658; Denmark 98,458.
Bituminous mixtures		32,546	83	Denmark 24,712; Norway 4,865; Belgium-Luxembourg 617.
Petroleum coke		38,895	17	Finland 21,473; United Kingdom 5,972; Germany 3,589.

1/ Table prepared by Glenn J. Wallace.

2/ Less than 1/2 unit.

3/ May include high-purity silicon.

4/ Includes dust, flakes, and powders.

5/ Reported under SITC item number as "selenium, tellurium, phosphorus, arsenic, etc."

Source: United Nations Statistical Office (microfiche).

TABLE 4
SWEDEN: IMPORTS OF MINERAL COMMODITIES IN 1996 1/

(Metric tons unless otherwise specified)

			Sources	
Commodity		Total	United States	Other (principal)
METALS				
Alkali and alkaline-earth metals:				
Alkali metals	value, thousands	\$128	\$3	Austria \$70; Japan \$18; United Kingdom \$15.
Alkaline-earth metals		50	3	Finland 19; Austria 16; France 3.
Aluminum:				
Ore and concentrate		46,890	--	Australia 26,892; Brazil 5,776; Netherlands 5,506.
Oxides and hydroxides		178,839	326	Jamaica 110,421; Ireland 61,677; Netherlands 2,479.
Metal including alloys:				
Scrap		6,167	1	Germany 1,373; Finland 1,115; Denmark 1,093.
Unwrought		105,523	--	Norway 48,506; Russia 19,919; France 18,789.
Semimanufactures		115,571	768	Gernany 37,961; Norway 30,087; France 15,834.
Antimony, metal including alloys, all forms		19	--	Belgium-Luxembourg 10; Netherlands 5; Germany 2.
Beryllium, metal including alloys, all forms	value, thousands	\$9	\$1	Germany \$8.
Bismuth, metal including alloys, all forms		11	--	Belgium-Luxembourg 4; United Kingdom 4; Germany 3.
Cadmium, metal including alloys, all forms		62	2	Norway 40; Belgium-Luxembourg 10; Netherlands 5.
Chromium:				
Oxides and hydroxides		312	1	Germany 155; United Kingdom 68; Spain 31.
Metal including alloys, all forms		486	4	United Kingdom 301; France 88; Netherlands 39.
Cobalt:				
Oxides and hydroxides		7	(2/)	Germany 6; United Kingdom 1.
Metal including alloys, all forms		816	30	Finland 235; South Africa 211; Germany 133.
Columbium and tantalum, tantalum metal including alloys, all forms	value, thousands	\$679	\$563	Germany \$66; United Kingdom \$19; Russia \$18.
Copper:				
Ore and concentrate		85,258	--	Chile 62,834; Netherlands 16,324; Germany 5,680.
Matte and speiss including cement copper	value, thousands	\$58	\$7	Finland \$30; Netherlands \$20.
Metal including alloys:				
Scrap		29,025	3,049	Germany 7,042; United Kingdom 3,893; Finland 3,047.
Unwrought		50,214	391	Finland 15,527; Poland 11,532; Norway 9,484.
Semimanufactures		47,142	242	Germany 9,129; Belgium-Luxembourg 8,671; France 8,653.
Germanium, metal including alloys, all forms	value, thousands	\$26	--	Belgium-Luxembourg \$14; Netherlands \$6; Germany \$5.
Gold:				
Waste and sweepings	do.	\$35	\$2	Norway \$33.
Metal including alloys, unwrought and partly wrought	do.	\$16,403	\$690	Norway \$4,650; Ireland \$4,598; Germany \$3,622.
Iron and steel:				
Ore and concentrate:				
Excluding roasted pyrite		144,669	--	Norway 143,248; Netherlands 1,247; South Africa 105.
Pyrite, roasted		5,651	--	Finland 3,690; Norway 1,949.
Metal:				
Scrap		333,059	8,148	Estonia 83,613; Russia 62,215; Denmark 46,173.
Pig iron, cast iron, related materials		50,197	2,133	Russia 15,413; Finland 4,869; Norway 4,778.
Ferroalloys:				
Ferromanganese		64,878	114	Norway 26,227; Finland 21,151; Netherlands 4,736.
Ferromanganese		24,501	--	Norway 13,933; Netherlands 4,543; France 2,850.
Ferronickel		16,657	--	Greece 11,527; New Caledonia 1,974; Dominican Republic 1,931.
Ferrosilicochromium		2,397	--	Netherlands 1,247; China 793; Zimbabwe 216.
Ferrosilicomanganese		18,163	--	Belgium-Luxembourg 1,051; Poland 983; France 950.
Ferrosilicon		30,978	1	Norway 27,183; Poland 2,854; United Kingdom 375.
Silicon metal 3/		2,487	1	Norway 2,407; United Kingdom 30; Germany 14.
Unspecified		9,555	20	Netherlands 2,547; Germany 1,836; Norway 1,704.
Steel, primary forms		335,335	1,640	United Kingdom 310,277; Germany 10,173; Finland 6,947.
Semimanufactures:				
Flat-rolled products:				
Of iron or nonalloy steel:				
Not clad, plated, coated		498,744	71	Germany 123,698; Denmark 77,967; Finland 76,584.
Clad, plated, coated		556,016	278	Germany 184,145; France 105,290; Finland 64,106.
Of alloy steel		130,174	525	Germany 55,090; United Kingdom 21,490; Finland 21,415.
Bars, rods, angles, shapes, sections		590,933	1,299	Finland 159,359; United Kingdom 104,616; Germany 85,801.

See footnotes at end of table.

TABLE 4--Continued
SWEDEN: IMPORTS OF MINERAL COMMODITIES IN 1996 1/

(Metric tons unless otherwise specified)

Commodity	Total	Sources	
		United States	Other (principal)
METALS--Continued			
Iron and steel--Continued:			
Metal--Continued:			
Semimanufactures--Continued:			
Rails and accessories	22,659	--	Austria 13,277; United Kingdom 4,063; France 2,941.
Wire	56,858	73	United Kingdom 15,103; Germany 11,889; Belgium-Luxembourg 10,654.
Tubes, pipes, fittings	306,532	843	Finland 58,473; Germany 58,067; United Kingdom 36,005.
Lead:			
Ore and concentrate	1,158	--	All from Ireland.
Oxides	5,148	1	Germany 4,977; Finland 161; United Kingdom 4.
Metal including alloys:			
Scrap	11,153	--	Norway 5,323; Estonia 3,635; Denmark 1,215.
Unwrought	9,368	5	Russia 2,924; Kazakstan 2,353; Finland 2,113.
Semimanufactures	141	1	Germany 103; Switzerland 20; United Kingdom 6.
Magnesium, metal including alloys:			
Unwrought	3,325	1	Norway 2,757; Finland 362; Netherlands 145.
Semimanufactures	339	26	Norway 135; Austria 40; Netherlands 38.
Manganese:			
Ore and concentrate, metallurgical-grade	173	15	Netherlands 156; Germany 2.
Oxides and hydroxides	2,200	5	Norway 1,796; Belgium-Luxembourg 212; Germany 116.
Metal including alloys, all forms	2,299	387	Netherlands 649; China 513; Germany 340.
Mercury	value, thousands \$472	\$1	Germany \$462; Netherlands \$4; United Kingdom \$3.
Molybdenum:			
Ore and concentrate:			
Roasted	5,503	2,409	Chile 1,205; Belgium-Luxembourg 872; Netherlands 703.
Unroasted	1	--	All from United Kingdom.
Metal including alloys:			
Unwrought, including waste and scrap	72	6	Germany 40; United Kingdom 25; Estonia 1.
Semimanufactures	49	16	Austria 20; Germany 10; Belgium-Luxembourg 2.
Nickel:			
Ore and concentrate	value, thousands \$1	\$1	
Matte and speiss	5,442	--	All from Netherlands.
Metal including alloys:			
Scrap	24,811	7,878	Germany 6,599; Russia 6,581; Switzerland 1,775.
Unwrought	15,136	(2/)	United Kingdom 5,054; Finland 4,247; Norway 3,636.
Semimanufactures	2,103	174	United Kingdom 755; France 695; Belgium-Luxembourg 193.
Platinum-group metals:			
Waste and sweepings	value, thousands \$1	--	All from Finland.
Metal including alloys, unwrought and partly wrought	do. \$10,712	\$1,582	Switzerland \$4,486; Germany 43,257; United Kingdom \$590.
Silver, metal including alloys, unwrought and partly wrought	do. \$14,523	\$141	Norway \$6,861; Germany \$2,790; Spain \$1,686.
Tin, metal including alloys:			
Scrap	93	--	Denmark 57; Finland 20; Norway 15.
Unwrought	557	1	Netherlands 376; Germany 78; Belgium-Luxembourg 30.
Semimanufactures	value, thousands \$1,508	\$1	United Kingdom \$626; Germany \$622; Netherlands \$134.
Titanium:			
Ore and concentrate	658	--	Netherlands 256; Germany 186; Australia 101.
Oxides	1,614	2	Norway 618; Germany 244; Finland 209.
Metal including alloys:			
Unwrought, including waste and scrap	146	1	Russia 110; Kazakstan 20; Netherlands 5.
Semimanufactures	255	68	Japan 27; Italy 24; Norway 24.
Tungsten:			
Metal including alloys:			
Unwrought, including waste and scrap	388	146	Germany 125; United Kingdom 59; Netherlands 23.
Semimanufactures	value, thousands \$1,260	\$249	Germany \$578; United Kingdom \$131; France \$115.

See footnotes at end of table.

TABLE 4--Continued
SWEDEN: IMPORTS OF MINERAL COMMODITIES IN 1996 1/

(Metric tons unless otherwise specified)

Commodity	Total	Sources	
		United States	Other (principal)
METALS--Continued			
Uranium and thorium, metal including all forms:			
Uranium	value, thousands	\$222	\$222
Thorium	do.	\$305	\$6 Canada \$298.
Vanadium, metal including alloys, all forms		71	(2/) Germany 55; Netherlands 16.
Zinc:			
Ore and concentrate		2	-- All from Germany.
Oxides		3,096	-- Germany 1,381; United Kingdom 669; Netherlands 402.
Metal including alloys:			
Scrap		266	-- Denmark 156; Norway 85; Finland 25.
Unwrought		39,616	9 Norway 16,559; Finland 13,348; Belgium-Luxembourg 1,543.
Semimanufactures 4/		2,482	2 Norway 1,838; Germany 421; United Kingdom 97.
Zirconium, ore and concentrate		788	52 Belgium-Luxembourg 336; Netherlands 288; Finland 81.
Other:			
Oxides and hydroxides		3,358	1,537 Germany 624; Russia 441; United Kingdom 248.
Ashes and residues		82,595	2,410 Germany 50,202; United Kingdom 12,145; Finland 4,437.
Base metals including alloys, all forms	value, thousands	\$4,319	\$40 Germany \$3,190; United Kingdom \$501; Belgium-Luxembourg \$285.
Metalloids 5/		91	4 Germany 55; Netherlands 17; Belgium-Luxembourg 7.
Precious metals, n.e.s.:			
Ores and concentrates	value, thousands	\$19,264	-- Saudi Arabia \$16,798; Germany \$1,349; United Kingdom \$1,116.
Waste and sweepings	do.	\$16,536	\$14,548 Norway \$1,294; Germany \$218; United Kingdom \$192.
INDUSTRIAL MINERALS			
Abrasives, n.e.s.:			
Natural, corundum, emery, pumice, etc.		666	17 Germany 400; Iceland 55; India 43.
Artificial corundum		7,323	-- United Kingdom 3,047; Germany 1,095; Hungary 843.
Dust and powder of precious and semiprecious stones including diamonds	value, thousands	\$4,924	\$24 Switzerland \$2,940; Germany \$1,014; United Kingdom \$480.
Grinding and polishing wheels and stones		2,778	18 Denmark 911; Netherlands 407; United Kingdom 353.
Asbestos, crude		158	-- All from Canada.
Barite and witherite		2,668	-- Netherlands 1,769; Germany 632; United Kingdom 257.
Boron:			
Crude natural borates		728	-- Netherlands 719; Germany 7; Denmark 2.
Oxides and acids		1,508	2 Turkey 681; France 286; Netherlands 176.
Bromine, fluorine, iodine		11	(2/) Netherlands 8; Germany 2.
Cement		223,428	35 Lithuania 71,372; Poland 65,683; France 55,301.
Chalk		53,133	-- Denmark 47,999; Germany 1,838; Belgium-Luxembourg 1,289.
Clays, crude:			
Bentonite		110,649	1,152 Greece 83,503; United Kingdom 10,898; Cyprus 4,851.
Kaolin		342,964	106,440 United Kingdom 212,839; Netherlands 13,418; Germany 3,349.
Unspecified		31,664	13,818 China 4,810; Netherlands 2,820; Germany 2,534.
Cryolite and chiolite	value, thousands	\$1	-- All from Switzerland.
Diamond, natural:			
Gem, not set or strung	do.	\$4,557	\$17 Belgium-Luxembourg \$2,172; Israel \$1,564; India \$476.
Industrial stones	do.	\$89	\$4 Netherlands \$42; Israel \$20; Belgium-Luxembourg \$19.
Diatomite and other infusorial earth		5,130	1,293 Denmark 2,421; Spain 681; Iceland 558.
Feldspar		10,017	-- Norway 8,930; Italy 350; Germany 101.
Fertilizer materials:			
Crude, n.e.s.		1,310	46 Denmark 1,225; United Kingdom 34; Norway 3.
Manufactured:			
Ammonia		199,996	1 Russia 105,310; Germany 37,536; Poland 36,448.
Nitrogenous		410,437	6 Norway 240,674; Russia 52,935; Lithuania 38,632.
Potassic		12,068	-- Germany 11,913; France 138; Denmark 7.
Unspecified and mixed		47,493	15 Netherlands 20,766; Poland 12,717; Denmark 5,470.
Fluorspar		16,082	-- China 5,007; Netherlands 4,884; Germany 2,314.
Graphite, natural		496	2 Germany 325; Norway 46; Brazil 38.
Gypsum and plaster		322,453	80 Denmark 189,418; Spain 101,155; Germany 27,411.
Lime		51,317	-- France 32,261; Norway 5,061; Poland 4,265.

See footnotes at end of table.

TABLE 4--Continued
SWEDEN: IMPORTS OF MINERAL COMMODITIES IN 1996 1/

(Metric tons unless otherwise specified)

			Sources	
Commodity	Total	United States	Other (principal)	
INDUSTRIAL MINERALS--Continued				
Magnesium compounds:				
Magnesite, crude	145	--	Norway 56; Germany 36; Slovakia 24.	
Oxides and hydroxides	32,622	398	Greece 9,100; Germany 6,131; Spain 5,996.	
Mica:				
Crude including splittings and waste	723	1	United Kingdom 341; Finland 157; France 132.	
Worked including agglomerated splittings	190	1	Austria 80; Germany 45; Switzerland 38.	
Nitrates, crude	4,933	--	Belgium-Luxembourg 3,002; Germany 1,497; Poland 334.	
Phosphates, crude	61,024	4	Morocco 60,954; France 61; Germany 3.	
Pigments, mineral, iron oxides and hydroxides, processed	6,103	2	Norway 2,951; Germany 1,844; United Kingdom 841.	
Potassium salts, crude	25	--	All from Germany.	
Precious and semiprecious stones other than diamond:				
Natural	value, thousands	\$5,240	\$728	Sri Lanka \$1,472; Thailand \$774; Hong Kong \$437.
Synthetic	do.	\$1,485	\$22	Ireland \$818; Germany \$272; Japan \$143.
Pyrite, unroasted		293	--	Italy 198; Finland 81; Germany 13.
Quartz crystal, piezoelectric	value, thousands	\$181	\$4	Japan \$121; Denmark \$21; Italy \$9.
Salt and brine	thousand tons	1,096	(2/)	Germany 552; Netherlands 230; Denmark 158.
Sodium compounds, n.e.s.:				
Soda ash, manufactured		93,835	70	Poland 43,295; Germany 25,585; Netherlands 23,956.
Sulfate, manufactured		4,671	--	Finland 1,917; Netherlands 1,763; Denmark 331.
Stone, sand and gravel:				
Dimension stone:				
Crude and partly worked		5,246	15	Norway 2,064; Finland 1,782; Israel 574.
Worked		30,285	239	Portugal 15,198; Norway 5,291; Denmark 2,872.
Dolomite, chiefly refractory-grade		214,172	4	Norway 82,200; United Kingdom 68,278; Belgium-Luxembourg 56,643.
Gravel and crushed rock		365,649	63	Norway 257,782; Belgium-Luxembourg 51,981; Finland 31,161.
Limestone other than dimension		55,440	--	Norway 20,265; Denmark 17,618; Latvia 9,195.
Quartz and quartzite		1,504	139	Belgium-Luxembourg 1,092; Denmark 170; Brazil 21.
Sand other than metal-bearing		597,959	1,116	Denmark 418,824; Norway 16,789; Belgium-Luxembourg 154,474.
Sulfur:				
Elemental:				
Crude including native and byproduct		90,214	61	Poland 88,069; Denmark 1,136; United Kingdom 655.
Colloidal, precipitated, sublimed		1,074	--	Norway 754; Germany 293; United Kingdom 22.
Sulfuric acid		312	1	Germany 155; United Kingdom 68; Spain 31.
Talc, steatite, soapstone, pyrophyllite		24,718	1	Finland 17,093; Norway 3,647; Belgium-Luxembourg 1,771.
Vermiculite, perlite, chlorite		1,680	63	United Kingdom 682; Netherlands 601; Norway 154.
Other:				
Crude		226,213	259	Norway 212,333; Germany 6,222; Estonia 3,002.
Slag and dross, not metal-bearing		37,311	316	Norway 25,252; Netherlands 5,188; United Kingdom 3,117.
MINERAL FUELS AND RELATED MATERIALS				
Asphalt and bitumen, natural		1,304	20	Norway 1,109; Finland 145; France 24.
Carbon black		12,747	69	Netherlands 7,760; Germany 2,215; France 1,077.
Coal:				
Anthracite		95,962	50,836	China 16,070; Belgium-Luxembourg 11,971; United Kingdom 8,300.
Bituminous	thousand tons	2,837	835	Poland 1,010; Australia 472; Russia 242.
Briquets of anthracite and bituminous coal		10,319	79	Poland 10,218; Sri Lanka 15; Denmark 7.
Lignite including briquets		13,787	--	Australia 13,680; Germany 107.
Unspecified		303,132	43,449	Poland 142,939; Australia 41,276; Venezuela 35,065.
Coke and semicoke		366,089	10,815	China 131,137; United Kingdom 64,010; Japan 40,000.
Gas, natural, liquefied		707,339	--	Denmark 707,315; Poland 24.
Peat including briquets and litter		155,580	--	Estonia 99,448; United Kingdom 28,481; Finland 23,687.
Petroleum:				
Crude	thousand tons	21,342	--	Norway 10,159; United Kingdom 2,480; Denmark 1,884.
Refinery products:				
Liquefied petroleum gas		713,524	(2/)	Norway 523,175; United Kingdom 103,100; Algeria 32,086.
Gasoline	thousand tons	1,593	(2/)	Denmark 705; Finland 638; United Kingdom 112.

See footnotes at end of table.

TABLE 4--Continued
SWEDEN: IMPORTS OF MINERAL COMMODITIES IN 1996 1/

(Metric tons unless otherwise specified)

Commodity	Total	Sources	
		United States	Other (principal)
MINERAL FUELS AND RELATED MATERIALS--Continued			
Petroleum--Continued:			
Mineral jelly and wax	17,534	419	Germany 8,432; Norway 5,133; Belgium-Luxembourg 690.
Kerosene and jet fuel	965,042	62	Finland 320,171; Denmark 263,094; Germany 126,944.
Lubricants thousand tons	1,436	2	Estonia 425; Finland 415; Denmark 190.
Refinery products--Continued:			
Residual fuel oil tons, thousands	1,829	(2/)	Germany 987; Indonesia 248; United Kingdom 130.
Bitumen and other residues	4,603	25	France 2,490; Finland 1,060; United Kingdom 995.
Bituminous mixtures	5,777	30	France 3,076; Germany 1,605; Denmark 497.
Petroleum coke	99,166	41,015	United Kingdom 21,817; Denmark 14,110; Netherlands 12,374.

1/ Table prepared by Glenn J. Wallace.

2/ Less than 1/2 unit.

3/ May include high-purity silicon.

4/ Includes dust, flakes, and powders.

5/ Reported under SITC item number as "selenium, tellurium, phosphorus, arsenic, etc."

Source: United Nations Statistical Office (microfiche).